

AMENDMENT TO THE CLAIMS

1. (Currently Amended) A loaded antenna characterized in that a the radiating element of the antenna includes at least two parts, a first part consisting of ~~on~~ at least one conducting surface, a second part being a loading structure, said loading structure including ~~consisting on~~ at least a conducting strip, wherein at least one of said strips are connected at least at one point on the edge of said first conducting surface, and wherein the maximum width of said strip or strips is smaller than a quarter of the longest edge of first conducting surface.
2. (Currently Amended) A loaded antenna according to claim 1 ~~characterized in that the radiating element includes at least two parts, first part consisting on a conducting surface, second part being a loading structure, said loading structure consisting on at least a conducting strip~~, wherein the two tips of at least one of the conducting strips are connected at two points on the perimeter of said first conducting surface.
3. (Currently Amended) A loaded antenna according to claim 1 or 2 wherein said first conducting surface and second loading structure are lying on a common ~~the same~~ flat or curved surface.
4. (Currently Amended) A loaded antenna according to claim 1 ~~claim 1,2 or 3~~ comprising a conducting surface and at least a first and a second strip, wherein said first strip is connected at least at one point on the perimeter of said conducting surface, and wherein said second strip is connected at least by means of one of its tips to said first conducting strip.
5. (Currently Amended) A loaded antenna according to claim 1 ~~claim 1,2,3 or 4~~ wherein the antenna includes at least a second conducting surface, said second conducting surface featuring a smaller area than the first conducting surface, and wherein at least one conducting strip is connected to the first conducting surface at one end, and to the second conducting surface at another ~~the other~~ end
6. (Currently Amended) A loaded antenna including a conducting surface and a loading structure according to claim 1, ~~any of the preceding claims~~ wherein the perimeter of said conducting surface

is shaped as either ~~chosen from the following set:~~ a triangle ~~triangular~~, a square, a rectangle ~~rectangular~~, a trapezoid ~~trapezoidal~~, a pentagon ~~pentagonal~~, a hexagon ~~hexagonal~~, a heptagon ~~heptagonal~~, an octagon ~~octagonal~~, a circle ~~circular~~ or an ellipse. ~~elliptical~~.

7. (Currently Amended) A loaded antenna including a conducting surface and a loading structure according to claim 1, ~~any of the claims 1 to 5~~ wherein at least a portion of said conducting surface is a multilevel structure.

8. (Currently Amended) A loaded antenna including a conducting surface and a loading structure according to claim 1, ~~any of the preceding claims~~ wherein the shape of at least one loading strip is a curve that includes ~~composed by~~ a minimum of two segments and a maximum of nine segments which are connected in such a way that each segment forms an angle with an adjacent segment such that their neighbours, i.e., no pair of adjacent segments define a larger straight segment.

9. (Currently Amended) A loaded antenna including a conducting surface and a loading structure according to claim 1, ~~any of the claims 1 to 7~~ wherein the loading structure includes at least one straight strip, said straight strip having one end connected to a point on an ~~the~~ edge of said conducting surface.

10. (Currently Amended) A loaded antenna including a conducting surface and a loading structure according to claim 1, ~~any of the claims 1 to 7~~ wherein ~~the shape of~~ at least one loading strip is shaped as a space-filling curve.

11. (Currently Amended) A loaded antenna including a conducting surface and a loading structure according to claim 1, ~~any of the claims 1 to 7~~ wherein at least one loading strip is a straight strip with a polygonal shape.

12. (Currently Amended) A loaded antenna including a conducting surface and a loading structure according to claim 1, ~~any of the claims 1 to 7~~ wherein the loading structure includes at least two strips, ~~with the first strip with one tip~~ and wherein a tip of a first one of the strips is free of

~~connection, or connected to the second strip, or both tips connected to the second strip or one tip connected to the second strip and the other tip connected to the conducting surface.~~

13. (Currently Amended) A loaded antenna including a conducting surface and a loading structure according to claim 1 ~~any of the claims 1 to 7~~ wherein the loading structure includes ~~consists on~~ two or more strips connected at several points on a ~~the~~ perimeter of said conducting surface.

14. Cancelled.

15. (Currently Amended) A loaded antenna including a conducting surface and a loading structure according to claim 1, ~~any of the preceding claims~~ wherein a central portion of the conducting surface is removed.

16. (Currently Amended) A loaded antenna according to claim 1, ~~any of the preceding claims~~ wherein the antenna is a monopole, said monopole including a ground-plane or ground-counterpoise and a radiating element, said radiating element including at least a conducting surface and a loading structure.

17. (Currently Amended) A loaded antenna according to claim 1, ~~any of the claims 1 to 15~~ wherein the antenna is a dipole including two arms, said arms including at least a conducting surface and a loading structure.

18. (Currently Amended) A loaded antenna according to claims 16 or 17 where the radiating element is printed on one side ~~of the sides~~ of a dielectric substrate and the load has a conducting surface on another ~~the other~~ side of the substrate.

19. (Currently Amended) A loaded antenna according to claim 1, ~~any of the claims 1 to 15~~ wherein the antenna is a microstrip patch antenna and wherein a ~~the~~ radiating patch of said antenna includes a conducting surface and a loading structure.

20. (Currently Amended) A loaded antenna according to claim 1, ~~any of the preceding claims~~, characterized in that the antenna features a multiband behavior, a broadband behavior or a combination of a multiband behavior and a broadband behavior both.

21. (Currently Amended) A loaded antenna according to claim 1, ~~any of the preceding claims~~, characterized in that the antenna is shorter than a quarter of the central operating wavelength.

22. Cancelled.

23. (Currently Amended) A loaded antenna according to claim 1, ~~any of the preceding claims~~ characterized in that the radiating element is used in at least one of the selective elements on a frequency selective surface.

24. (Currently Amended) A loaded antenna according to claim 1 ~~any of the preceding claims~~, characterized in that the geometry of the surface, the loading structure or both are shaped by an iterated function system mathematical algorithm, a multi-reduction copy machine mathematical algorithm, a networked multi-reduction copy machine mathematical algorithm, or a combination thereof. ~~means of one or a combination of the following mathematical algorithms: Iterated Function Systems, Multi Reduction Copy Machine, Networked Multi Reduction Copy Machine.~~

25. (New) A loaded antenna including a conducting surface and a loading structure according to claim 1, wherein the loading structure includes at least two strips, and wherein a tip of a first one of the strips is connected to a second one of the strips.

26. (New) A loaded antenna including a conducting surface and a loading structure according to claim 1, wherein the loading structure includes at least two strips, and wherein both tips of a first one of the strips are connected to a second one of the strips.

27. (New) A loaded antenna including a conducting surface and a loading structure according to claim 1, wherein the loading structure includes at least two strips, and wherein a first tip of a first one of the strips is connected to a second one of the strips and a second tip of the first one of the strips is connected to the conducting surface.